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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Eitan Rivlin

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1 PENN PLAZA-SUITE 2527

NEW YORK, NY 10119

EXAMINER

MCLAREN, STEPHANIE D

ART UNIT

PAPER NUMBER

3744

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/527,791	Applicant(s) RIVLIN, EITAN	
	Examiner STEPHANIE MCLAREN	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10, 13-18 and 20-28 is/are rejected.
- 7) ☒ Claim(s) 7, 11, 12 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/30/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "space saving element" is not sufficiently defined in the specification.
3. Claims 27 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These are omnibus claims

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
2. Claims 1, 2, 3, 5, 6, 8, 9, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown (2,449,766).

Art Unit: 3744

With regards to claim 1, Brown discloses: A fluid mixing valve for producing a mixed fluid stream from first and second fluid streams having different, varying temperatures, and having different, varying pressures, said mixed fluid stream having a substantially stable, preselected temperature of a magnitude between the temperatures of said first and second fluid streams, said fluid mixing valve including: a) a housing (10), which includes: i) a first fluid inlet (14) for admitting said first fluid stream, ii) a second fluid inlet (15) for admitting said second fluid stream, and iii) a first fluid outlet (through 22) for a resulting said mixed fluid stream; and b) a mixing regulation assembly (13) disposed within said housing, which includes: i) a mixing element having spaced apart third (33) and fourth (34) fluid inlets, and a second fluid outlet (30) arranged in fluid flow communication with said third and fourth fluid inlets, said third and fourth fluid inlets being arranged so as to permit the flow therethrough of said first and second fluid streams so as to facilitate mixing thereof into said mixed fluid stream, said second fluid outlet being arranged so as to facilitate outflow therethrough of said mixed fluid stream (see fig. 1), ii) a stream divider (63), arranged in fluid flow communication with said second fluid outlet, operative to divide said mixed stream into two component streams each having rates of flow and pressures which are substantially equal to those of the other (see fig. 1, fig. 2); iii) at least one flow controlling mechanism (38, 38a) for increasing the flow of one of said two component streams and decreasing the flow of the other of said two component streams in concert (via rod 40), so as to induce a pressure differential between said two component streams; iv) at least one thermally responsive element (24) arranged to be in fluid flow and in heat transfer communication

Art Unit: 3744

with at least one of said two component streams (see fig. 1) and operative, to control said at least one flow controlling mechanism in response to a difference between the temperature of said two component streams and said preselected temperature (via valve 63 and water pressure), v) a recombination and discharge means (23) for recombining said two component streams into said mixed fluid stream for output from said fluid mixing valve via said first fluid outlet (through 22); wherein, in response to a difference between the temperature of said two component streams and said preselected temperature resulting from a change in temperature or pressure of at least one of said first and second fluid streams, said mixing regulation assembly is operative in response to the induced pressure differential between said two component fluid streams, to adjust the relative flows of said first and second fluid streams so as to counterbalance the difference between the temperature of said two component streams and said preselected temperature, thereby substantially restoring said mixed fluid stream to said preselected temperature (col. 5, line 57 – col. 6, line 11).

With regards to claim 2, Brown discloses: wherein said first and second fluid inlets respectively include first and second inlet valves (38, 38a) which are mechanically linked (via rod 40) so as to control the relative inlet flows of said first and second fluid streams.

With regards to claim 3, Brown discloses: wherein said first and second inlet valves (38, 38a) substantially increase the flow through one of said first and second fluid

Art Unit: 3744

inlets while simultaneously decreasing the flow through the other of said first and second fluid inlets in response to said mixing element (col. 6, line 1-11).

With regards to claim 5, Brown discloses: wherein said housing includes at least one housing element (10) and at least one closure element (18) for facilitating disposition of said mixing regulation assembly therein.

With regards to claim 6, Brown teach the possible inclusion of: wherein said housing includes a temperature adjusting mechanism for altering said preselected temperature of said mixed fluid stream, said temperature adjusting mechanism including at least one pressure differential inducing mechanism for changing the relative rates of flow of said two component fluid streams therebetween, wherein said at least one pressure differential inducing mechanism is selected from the group of: a double-acting valve; a displacement mechanism; and a position-changing mechanism for changing the position of said thermally responsive element (col. 3, 58-65).

With regards to claim 8, Brown discloses: wherein, said mixing regulation assembly is configured within said housing as a working element operative, in response to said pressure differential between said two component fluid streams and provided with a separator to substantially prevent fluid leakage between said two component streams past said working element, said separator selected from one of the group of: a diaphragm (38, 38a) having at least one flexible membrane (col. 4, line 28-31); a piston

Art Unit: 3744

having at least one circumferential fluid seal; and a vane rotationally operative having a peripheral seal.

With regards to claim 9, Brown discloses: wherein said mixing regulation assembly operative to adjust the relative flows of said first and second fluid streams is selected from the group of: a rotationally operative planar disc; a rotationally operative ball; a displaceably operative planar slide (rod 40); and a displaceably operative spool pipe assembly.

With regards to claim 13, Brown discloses: wherein said at least one thermally responsive element is selected from one of the groups of: bimetal elements (col. 3, line 50-54); thermally expandable elements; wax-operated thermostats; and fluid-operable elements.

With regards to claim 14, Brown discloses: wherein said bimetal elements are configured as one of the elements selected from the group: disc, coil (col. 3, line 50-54) and rod.

With regards to claim 15, Brown discloses: wherein said at least one flow controlling mechanism includes a double-acting valve device (opposing diaphragms 38 and 38a, connected by rod 40) for altering said preselected temperature of said mixed fluid stream.

With regards to claim 16, Brown discloses: wherein said recombination and discharge means is disposed in said housing external to said mixing regulation assembly (mixing assembly is in main housing 10, recombination means is in closure element 18).

With regards to claim 17, Brown discloses: wherein said recombination and discharge means and includes a double-acting valve (63) for changing the relative rates of flow of said two component fluid streams (via pressure differential in thimbles 47, 47a, which adjust diaphragms 38, 38a) so as to induce a pressure differential between said two component streams, thereby altering said preselected temperature.

With regards to claim 18, Brown discloses: A method for producing a mixed fluid stream from first and second inlet fluid streams having different, varying temperatures, and having different, varying pressures, said mixed fluid stream having a substantially stable, preselected temperature of a magnitude between the temperatures of said first and second inlet fluid streams, said method including the steps of: a) combining said first and second inlet fluid streams so as to produce said mixed fluid stream (col. 5, line 19-21); b) dividing said mixed fluid stream into two component streams having respective rates of flow and pressures which are substantially equal (as they flow over 63); e) sensing a difference between the temperature of said two component streams and said preselected temperature (col. 5, line 27-31); d) unbalancing the substantially

Art Unit: 3744

equal rates of flow of said two component streams (col. 5, line 70-75), such that the rate of flow of one of said two component streams is increased and the rate of flow of the other of said two component streams is decreased in accordance with the sensed difference between the temperature of said two component streams and said preselected temperature, thereby inducing a pressure differential between said two component streams (through passage ways 57, 58); e) adjusting the relative rates of flow of said first and second inlet fluid streams in relation to said induced pressure differential between said two component streams (via diaphragms 38, 38a), such that the flow of one of said first and second inlet fluid streams is increased and the flow of the other of said first and second inlet fluid streams is decreased in relation to said induced pressure differential between said two component streams, thereby restoring the temperature of said two component streams substantially to said preselected fluid temperature (col. 6, line 1-11); and f) recombining said two component streams to produce a combined outlet stream (in temperature chamber 23).

With regards to claim 20, Brown discloses: wherein after the step a) of combining said first and second inlet fluid streams so as to produce said mixed fluid stream there is a step of direct discharge of a relative portion of said mixed fluid stream to an outlet stream (chamber 23 leads directly to discharge 22).

With regards to claim 21, Brown discloses: wherein said step c) of sensing a difference between the temperature of said two component streams and said preselected temperature includes utilizing a thermally responsive device (24).

With regards to claim 22, Brown discloses the possibility of: further including, before said step c) of sensing, a step of altering said preselected temperature (col. 5, line 24-26).

With regards to claim 23, Brown discloses: wherein said step d) of unbalancing the substantially equal rates of flow of said two component streams includes inducing said pressure differential between said two component streams thereby altering said preselected temperature of said mixed fluid stream (col. 5, line 57-62).

With regards to claim 24, Brown discloses: wherein said step e) of adjusting the relative rates of flow of said first and second inlet fluid streams includes substantially terminating the flow of one of said first and second inlet fluid streams if the flow of the other of said first and second inlet fluid streams is substantially terminated (col. 6, line 20- 24).

With regards to claim 25, Brown discloses: wherein said step f) of recombining said two component streams includes adjusting the relative rates of flow of said two component streams so as to induce said pressure differential between said two

Art Unit: 3744

component streams thereby altering said preselected temperature of said mixed fluid stream (col. 5, line 57-63).

With regards to claim 26, Brown discloses: further comprising reversing step b) dividing said mixed fluid stream into two component streams and step d) unbalancing the substantially equal rates of flow of said two component streams (if 63 is already shifted, this will occur).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Riis (3,901,261).

With regards to claim 4, Brown fails to disclose: wherein said first fluid outlet includes an outlet flow regulator valve for controlling the rate of flow through said fluid mixing valve. Brown does however teach that unit 22 is intended to be connected to some further extension which will serve as the final fluid outlet (col. 3, line 38-42). Also, it is common in the art for there to be some form of outlet flow regulation to prevent the fluid from running constantly, resulting in undesirable wastage, or possible

Art Unit: 3744

contamination if the valve is used with chemical mixtures, as shown by Riis (outlet flow pressure control 14). Therefore, It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the invention of Brown to include an outlet fluid water control as shown by Riis, to prevent waste of a valuable resource such as water, or possible contamination of the workspace with chemical mixtures.

Allowable Subject Matter

5. Claims 7, 11, 12 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHANIE MCLAREN whose telephone number is (571) 270-7127. The examiner can normally be reached on Monday, Tuesday, Thursday 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules & Cheryl Tyler can be reached on (571) 272-6681 & (571)-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3744

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SDM
7/13/09

/Frantz F. Jules/
Supervisory Patent Examiner, Art Unit 3744